Communicable Disease UPDATE

Newsletter of the Bureau of Communicable Disease Control, Massachusetts Department of Public Health Vol. 6, No. 3 Summer 1998

Flu season approaches

This is a good time of year to review immunization status of adults and their risk factors for disease. To help protect adults from infectious diseases, the Massachusetts Immunization Program (MIP) distributes influenza, pneumococcal, and tetanus-diphtheria (Td) vaccines for adults. These vaccines are also available for younger individuals who need them because of medical conditions or because they are household contacts of persons with risk factors.

The MIP recommends influenza vaccination for all individuals aged ≥65 years; residents of long-term care facilities; those with chronic heart and lung conditions, including asthma, and those with other chronic medical problems that place them at increased risk for the complications of influenza; those with weakened immune systems; children on long-term aspirin therapy; women who will be greater than 3 months pregnant during the flu season; and others. This year the MIP, in collaboration with the Massachusetts Diabetes Control Program of the Massachusetts Department of Public Health, Bureau of Family and Community Health, is targeting individuals with diabetes for influenza vaccination, because they are three times more likely to die with influenza and pneumonia. Many of the risk factors for severe outcome with influenza also predispose an individual towards developing complications from pneumococcal disease. Thus, these patients should also be assessed for pneumococcal vaccination.

The MIP generally recommends people to be vaccinated in October thru mid-November, however, people with high-risk conditions can be vaccinated by their health care provider beginning in September. Flu shots can also be given at any time during the influenza season, which extends into March. This flu season, the MIP will distribute 650,000 doses of flu vaccine to local boards of health. The influenza vaccine to be distributed this year will provide protection against A/Beijing-like (H1N1), A/Sydney-like (H3N2), and B/Beijing-like strains of influenza virus.

Public health education reaches the internet

Busy work schedules can make it difficult for public health professionals to get out of the office to attend courses and seminars that will keep them up to date with the latest information. However, thanks to the wizardry of the electronic age, opportunities to participate in continuing education activities are now only as far away as the computer on your desk. The World Wide Web (WWW) opens the door to unique opportunities for alternative learning. The following sites will launch you to new avenues for learning.

Shiga-toxin producing *E. coli*

The Massachusetts Department of Public Health's Epidemiology Program is pleased to announce the development of a new, interactive seminar on Shiga-toxin producing *E. coli*. The course is designed for anyone involved in the surveillance, diagnosis, treatment, or laboratory investigation of enteric diseases. Participation in the course provides two contact hours of continuing education (0.2 CEUs) for the participant. The course was developed by the Massachusetts Department of Public Health, the Northeast Association for Clinical Microbiology and Infectious Disease (NACMID), and the National Laboratory Training Network. The course fee is $20.00 for NACMID members and $25.00 for nonmembers. You may access the seminar at <http://www.shore.net/~nacmid/>.

Hepatitis C

Get the latest information on hepatitis C through the Centers for Disease Control and Prevention's (CDC) Hepatitis C Video Conference accessed through the WWW. A video of the course may be viewed through your computer using RealPlayer software (also available to download through the WWW). Continuing education credit is not available for this course, but the course and RealPlayer are available free of charge at: <http://www.tstradio.com/hepa.ram>.

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Inside

Epidemiology

Tickborne coinfections

Infections with microorganisms transmitted by ticks constitute an emerging threat to public health. In Massachusetts, *Ixodes scapularis* ticks (deer ticks) are the vector of at least three microorganisms that may cause disease in humans. These diseases are: Lyme disease, caused by *Borrelia burgdorferi*; babesiosis, caused by *Babesia microti*; and human granulocytic ehrlichiosis, caused by a pathogen closely related to *Ehrlichia equi* and *Erlichia phagocytophilia.* Coinfection with two or more tick-borne pathogens may result in more severe disease. The appropriate clinical management of tick-borne diseases relies on the specific presentation of each case, as well as the patient's residence, travel history, and laboratory findings.

In Lyme disease endemic areas up to 10% of patients with Lyme disease are also infected with babesia. The initial symptoms of both illnesses may overlap. Nonspecific symptoms may include fever, fatigue, and flu-like symptoms. Most cases of babesiosis in immunocompetent individuals are subclinical and are a self-limiting illness. Severe disease, such as hemolytic anemia, most commonly occurs in asplenic or elderly patients. Since antibiotic therapy for Lyme disease is not effective against babesia, in a patient with Lyme disease and babesia coinfection, babesia may be responsible for the persistence of symptoms after antibiotic treatment.

Studies in Massachusetts have shown that a small proportion of persons with Lyme disease are infected with ehrlichia as well. Symptoms of ehrlichiosis may be nonspecific. Some of the antibiotics used for Lyme disease are also effective in the treatment of ehrlichiosis.

Therefore, in areas where all three diseases are endemic, symptoms as well as laboratory tests will play an important role in the confirmation and treatment of cases.

Preventive Measures

Taking appropriate preventive measures can decrease your chances of being bitten by a tick. To protect yourself from tick bites:

- **Wear light-colored clothes so ticks can be spotted more easily;**
- **Tuck pants into socks or boots, and shirt into pants;**
- **Use an appropriate insect repellent;**
- **Walk in the center of trails;**
- **Avoid tall grass and shrubbery; and**
- **Thoroughly check your body for ticks if you have been in a tick-infested area.**

Public health education reaches the internet

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Investigating an Outbreak: Pharyngitis in Louisiana

Follow the steps of an epidemiologic investigation of an outbreak of pharyngitis at: <http://www.cdc.gov/phtn/3050g.htm>.

Investigating a Rubella Outbreak

Learn about the current status of rubella and congenital rubella syndrome (CRS) in the U.S., how to investigate a suspected case of rubella, and an approach to the investigation and control of a rubella outbreak at: <http://cdlhc.sph.unc.edu/webcasts/archives/rubella/slideshow/index.html>.

Immunization Update

Obtain updates on new vaccines and vaccine combinations and recommendations from the Advisory Committee on Immunization Practices at: < http://cdlhc.sph.unc.edu/webcasts/archives/immune97/index.html>.

Other sites/information

Search for continuing medical education (CME) courses at: <http://www.searchcme.com/>.

Keep your eye on the CDC's Public Health Training Network site at: http://www.cdc.gov/phtn/media.htm (look under the "Interactive Multimedia" section)

Or, use a search engine and search under "Education" for "Continuing Education." Education is at your fingertips.

Survey shows need for more counseling

Clients of STD clinics often have complicated and competing needs for services beyond the medical care offered by the clinics. Although these services may be more psychosocial in nature, addressing such issues can have an impact on STD-related risk behaviors.

To explore these issues, the Massachusetts Division of STD Prevention has established a link with the Boston University School of Social Work in an effort to determine what psychosocial services are needed by clients, and what opportunities exist to address these needs. A graduate student from the school, Gina Baral, has spent six months conducting a needs assessment. Ms. Baral surveyed clinic nurses, the Disease Intervention Specialist supervisors, and clients themselves. This study was revealing in the degree of agreement among all three groups. The most important finding was the perceived need for additional and longer-term (3-5 visits) counseling.

Fifty-one patients were interviewed at six clinics, including Planned Parenthood in Worcester, SSTAR in New Bedford, Boston Medical Center, Brockton Hospital, Lowell Health Center, and Health Quarters in Lynn. Clients were interviewed as available and do not represent the total population of STD clinic users. The clients interviewed were 57% female, 58% were Caucasian, 25% African American, 18% Native American, 37% Latino, 20% Portuguese, 16% Cape Verdean and 5% Haitian (Respondents may have chosen more than one race or ethnicity category).

Clinic and field staff both felt that women had a need for counseling regarding self-esteem and health-seeking behaviors, and the majority of clients who expressed interest in counseling were women. Most had previously received counseling (63%) and felt that it was helpful (41%). A smaller number reported that previous counseling had been helpful specifically in changing their sexual and drug use behaviors (28%). Staff felt that they would like to provide additional service in these areas. Constraints on resources prevent this from happening. The other major areas of client needs identified by staff included access to health care, mental health and drug abuse-related services. Many STD clients are unable to access services because of financial constraints and lack of insurance coverage.

Clients stated that additional counseling could help address emotional needs, as well as help to develop skills to manage sexual health. Three-quarters expressed interest in longer-term (3-5 visits) and one-on-one counseling, preferably on site. However, only 63% indicated they would realistically keep an appointment or referral, if offered. Some (41%) expressed interest in group counseling, preferably on-site.

Clients expressing interest in counseling were asked what feelings people might have following an STD visit that might make them interested in this service. Feelings frequently mentioned included depression, shame, anger, fear, and guilt. Many clients, both male and female, used the word “dirty” to describe feelings.

An assessment of risk factors showed that 23% of all clients, and up to 31% of the women clients who expressed interest in counseling, reported being raped, forced, or intimidated to have sex. Close to half of these women (46%) indicated that this had occurred before the age of 10 years. In addition, 26% of all clients, and 31% of women clients who expressed interest in counseling, reported having had a partner who was violent. Of the clients surveyed, 8% had exchanged sex for drugs, and 14% for money. Ten percent reported injection drug use, and 26% had been in drug abuse treatment programs.

The most significant finding at this step of the project was the need for additional and longer-term counseling (3-5 visits). This is contrary to the historical practice of STD clinics, which offered episodic care and did not actively try to develop long-term provider/patient relationships. However, the importance of that relationship in fostering behavior change is being increasingly recognized, and a re-thinking of historical practices may be appropriate. Meanwhile, the STD Division will continue this survey with the next social work student to increase the response pool and the study’s reliability.

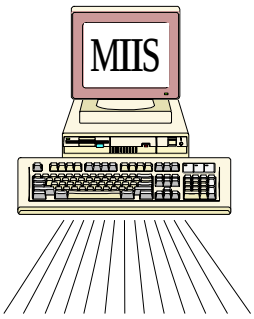
Immunization in action

CHNAs boost MIIS

The Community Health Network Area (CHNA) Immunization Committees in Lawrence and New Bedford have worked with community groups, health care providers, local boards of health, and school departments to improve immunization rates and identify populations with low rates. These efforts will help facilitate the implementation of the Massachusetts Immunization Information System (MIIS) on a community-wide basis.

Lawrence CHNA 11

A CHNA-based community coalition is working to improve immunization rates in Lawrence. The campaign has involved: annual kindergarten retrospective studies of immunization rates; the computerization of the childhood immunization records at the local community health center; an outreach effort tied to the community data developed; and a locally-based effort to work with the Massachusetts Department of Public Health (MDPH) to bring the Massachusetts Immunization Information System (MIIS) to the community. The campaign was the result of a collaboration between the Boston University School of Public Health (BUSPH), the Merrimack College Urban Institute (MCURI) and the MDPH.



Student volunteers worked with officials from the Greater Lawrence Family Health Center (GLFHC) to computerize all the 2,000 immunization records of children under 2 years old in the clinic. These records were intended to serve as the basis of an outreach program directed by an intern from BUSPH involving bilingual/bicultural students from Merrimack College.

Under the leadership of Peg Burton, health coordinator for the Lawrence school system, the immunization data on the 9,000 students in the system's computerized health database is being converted for import into the MIIS. Similarly, data from the Pediatric Health Center at Holy Family Hospital in Methuen and their walk-in clinic in downtown Lawrence is being brought into the MIIS. MDPH staff have been meeting with data system personnel from the (GLFHC).

This effort has been a success, with several lessons learned. First, having an existing coalition as a base for the introduction of the MIIS has been enormously valuable, since the relevant individuals were already involved in the CHNA effort. Second, the study has drawn local attention to the issue. Third, the collaboration between the academic centers and the community has been the basis for both the studies and outreach. Finally, no effort as complex as a community immunization campaign can succeed without the active cooperation of local and state officials.

Greater New Bedford CHNA 26

The Greater New Bedford CHNA has focused on childhood immunization as a top priority since the CHNA's inception in 1993. The CHNA formed an Immunization Subcommittee, with representatives from Southcoast Medical Systems, local school systems, agencies that provide outreach services (such as WIC), the New Bedford Board of Health, Head Start, the Massachusetts Prevention Center, and the Kennedy Donovan Center.

Initial activities included focus groups in select communities and a 1993 retrospective study that included kindergarten children in the entire CHNA. This study found that only 64% had been fully immunized by 2 years old, and in some towns, the rate of compliance was as low as 55%. Committee goals included identifying perceptions about immunization by consumers and health care providers and eliminating barriers to immunization.

Surveys and focus groups found that:

- Parents wished to receive immunization information at physicians' offices rather than immunization clinics;
- Parents wanted to be notified by their providers about when their child's immunizations were due;
- There was a sense of apathy among parents who felt that diseases were controlled, and they did not understand the need for immunizations;
- There may have been some confusion among health care providers about the Recommended Immunization Schedule, and;
- Providers may have missed immunization opportunities during medical encounters.

As a result, the Immunization Committee implemented a plan of action. Over the past five years, they have provided immunization education to parents at ESL classes, at housing developments, and in teen parenting programs. They are also helping local pediatricians publicize the availability of free immunizations to all families who can not afford an

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CHNAs boost MIIS

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administration fee. They have developed and distributed a region-wide brochure listing all immunization sites, particularly sites that offer immunizations at no or low cost. Finally, they have organized computerized "call-back" systems for local pediatricians' offices.

With the support of MDPH, the CHNA initiated a follow-up retrospective study of kindergarten children in 1997. The study showed a 10% to 19% increase in immunization rates for children two years of age.

The latest initiative involves facilitating the implementation of the MIIS. Because they have worked for the past five years to build a regional coalition, the Greater New Bedford CHNA was a natural place for implementing a system that will strengthen connections. In collaboration with the MIIS staff, the CHNA has put together a team to implement the system. The levels of action include documenting registrations at birth through the Southcoast Health System (which operates three community hospitals in New Bedford, Fall River, and Wareham). They will also be tracking children immunized at the Greater New Bedford Community Health Center, the New Bedford School Department, and at several key pediatric practices in the Greater New Bedford area. Implementation is targeted for late summer or early fall of 1998.

After five years of advocating for childhood immunization, it has been shown that a broad-based coalition is key in reaching children and their families, and in reinforcing the immunization message.

Foodborne illness reference manual on-line

The Massachusetts *Foodborne Illness Investigation and Control Reference Manual* is now available on the Massachusetts Department of Public Health's web page. The reference manual is geared to local boards of health and is a comprehensive guide that offers instruction on foodborne illness surveillance, epidemiologic and environmental investigation, and control. The web page address is <http://www.magnet.state.ma.us/dph/>. Look under "What's New" and scroll down to May 29, 1998. You will need Adobe Acrobat software, available at <http://www.adobe.com>, to view and download information.

You be the epi

You are the local public health nurse and have been notified that a patient who has sputum smear-positive for AFB (acid-fast bacilli) was admitted to your local hospital. The presumptive diagnosis is tuberculosis (TB) disease. What do you do?

Analysis

1. Visit the patient prior to discharge. Obtain a history, clinical data and contact information. Educate the patient about TB treatment, prevention and follow-up. Contact the discharge planner so that you are included in developing the patient's discharge plan.

During a home visit prior to the patient's discharge you find a 40-year old wife and two-year old daughter living in the household. Neither have symptoms of TB disease. You do a PPD skin test on both and read the results in 48-72 hours. You find that the wife has 16 mm of induration, but the daughter has no induration. How would you evaluate their need for preventive therapy?

2. Since the wife is a close contact to someone with infectious TB, and she has a positive skin test ($\geq$5 mm for close contacts), she needs further evaluation. This includes:

- A nursing assessment to determine prior PPD status, history of treatment for TB infection or disease, or medical conditions that are pertinent to TB treatment regimens;
- A chest x-ray to rule out active TB disease, and;
- If she has no history of prior appropriate treatment, a course of preventive therapy, regardless of age.

3. The daughter, also a close contact, has a 0 mm skin test reaction. Only a week has passed since she last spent time with her infectious father. Therefore, you cannot assume she is not infected with TB; she may not have converted her skin test yet. In addition, because she is so young, she may develop more serious forms of TB (miliary TB, meningitis) early after infection. What follow-up does she need?

- She also needs a medical evaluation with a chest x-ray;
- Start preventive therapy now, even with a negative PPD, and;
- Retest in 8 weeks. Discontinue her preventive therapy if her skin test is 0 mm. If she has a positive reaction, she should complete an entire course of preventive therapy (9 months for children).

Immunization

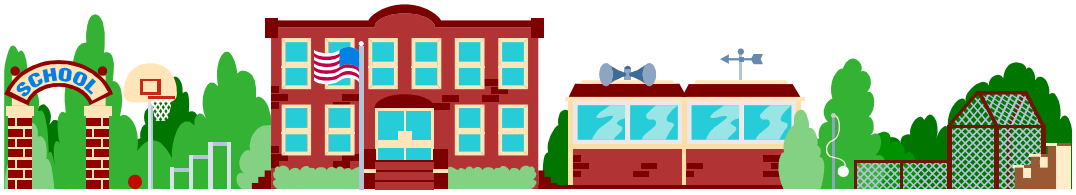
Hepatitis B–immunizing teens

With hepatitis B vaccine now available from the Massachusetts Department of Public Health (MDPH) for all children through age 18 years, more than 350 elementary, middle and high schools have instituted school-based hepatitis B immunization clinics. School-based hepatitis B vaccination programs are still the most effective method of reaching adolescents and of ensuring the completion of the immunization series. The Massachusetts Immunization Program (MIP) estimates that almost half of the children in the state have received the complete hepatitis B three-shot series, most of them through voluntary school-based programs. However, beginning September 1, 1999, Hepatitis B vaccination will be required for entry into 7th grade.

Immunizing all children against this contagious and dangerous disease is of public health importance. As children enter their adolescent years, many of the behaviors that put them at risk for acquiring the bloodborne hepatitis B virus become more common.

Successful implementation of school-based hepatitis B immunization clinics has relied on community partnerships. With the continued support of the Joint Committee on Adolescent Hepatitis B Immunization, whose membership includes boards of health, school nurses and physicians, superintendents of schools, members of the Massachusetts Chapter of the American Academy of Pediatricians (MCAAP), Rotary Clubs International, Massachusetts Parent-Teacher Organizations, and MIP Hepatitis B Prevention Project staff, all children through age 18 years can be free from the threat of hepatitis B infection.

Please contact the MIP at (617) 983-6800 with questions, and for guidance in starting school- and community-based hepatitis B immunization clinics in your area.



New varicella immunization requirement for child care centers*
Effective August 1, 1998

One dose of varicella vaccine, or a physician-certified reliable history of chickenpox, will be *required* for all children attending a child care center who were born on or after January 1, 1997 **and** who are 19 months of age or older.

*This requirement pertains to all child care centers, whether known by day care, preschool, or some other term, that are regulated by the Office for Child Care Services (formerly known as the Office for Children).

Please note: Effective September 1, 1999, varicella vaccine, or history of disease, will also be required for all children, of any age, attending child care centers run by public schools systems and regulated by the Massachusetts Department of Public Health.

Northeast regional update

Tuberculosis Surveillance Area (TSA) III

Epidemiology: In 1997, 42 cases of tuberculosis were identified in TSA III, compared to 41 cases in 1996.

Clinical Services are provided at Salem Hospital, Lawrence General Hospital, Saints Memorial Medical Center, and Malden Hospital. The North Shore Pulmonary Clinic located at the Salem Hospital serves patients from Salem, Lynn, and surrounding towns. MDPH TB quality improvement evaluations have been completed. A full quality review, including chart audits for each clinic site, will be conducted next year.

Support services are provided by Nancy Taylor Flynn, RN, BSN (TSA Nurse), who can be reached at (617) 727-7908 or (978) 851-7261, x50. Other staff are Constance Parke (Secretarial Services) and Linda Thistle (Case Register Surveyor).

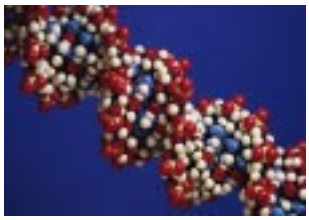
Community Outreach: Outreach workers (ORW) are assigned to "higher-risk" areas for tuberculosis. Higher-risk communities in the Northeast include: Lawrence, Lynn, Malden, and Lowell. Regional Refugee Health Coordinators are Emily Wen, located at the Greater Boston office, and Bich Ngoc Vu, located at the Northeast Regional Office. Outreach educators serve the Bosnian, Cuban, Haitian, Russian, Somali, and Iraqi communities. Refugee Health Outreach Educators for the Northeast are Sovannary Lak (Cambodian community), and Em Nguyen (Vietnamese Community). Outreach staff can be reached through Nancy Taylor Flynn, RN, TSA Nurse (phone number above).

Education: The TSA nurses have initiated a research project entitled "Completion of Therapy Survey." This will provide important information about the strategies, circumstances, and nursing interventions that affect patients who successfully complete tuberculosis treatment. The survey will be administered to patients when they complete therapy. The information collected will be used to improve the delivery of services to patients.

The **TB Community Prevention Project** is an effort to decrease population risk for tuberculosis. Community involvement and collaboration are integral components of the project. Team members meet regularly to identify high-risk communities and to develop plans to deliver preventive services to the high-risk populations. Nancy Taylor Flynn, RN, is the team leader for Team 1. The communities in Team 1 are Lowell, Lawrence, Springfield, Worcester, Lynn, Malden, and Chelsea.

Continued transmission of TB

Two laboratory methods used to distinguish strains of bacteria are phage typing and restriction fragment length polymorphism (RFLP) analysis. They are powerful tools that can provide information to help epidemiologists link cases of disease. The following illustrates the use of these techniques to link TB cases over a 13-year period.



In 1974, John Doe was treated for tuberculosis. His disease was resistant to two first line TB drugs: isoniazid and streptomycin (I/S). In 1983 he relapsed with disease. In 1984 and 1985, an outbreak of I/S resistant tuberculosis was observed in 24 residents of a homeless shelter in Boston (where John Doe had lived).

Phage typing was performed, and revealed that almost all of the I/S resistant cases at the shelter had the same phage type. Active case finding, dedicated nursing, and ultraviolet light to kill TB organisms were implemented in the shelter system.

Despite this, in 1996, the Division of TB Control continued to find I/S resistant disease among homeless TB patients, and suspected that the I/S resistant strain of 1995-96 was the same as that of 1984-85. Since 1995, RFLP (DNA fingerprinting) has been performed on I/S-resistant TB specimens from Massachusetts homeless patients. This test is more specific than phage typing. If two individuals' TB organisms have the same RFLP fingerprint, it is likely that they have the same strain of TB, and transmission could possibly have occurred between them. All I/S resistant homeless cases tested in 1995/96 had the same RFLP pattern.

Evidence suggested that the cases continuing into 1996 were all infected with the same strain, originating in 1983. Molecular fingerprinting was performed at the Centers for Disease Control and Prevention (CDC) on 10 isolates, four from 1988/89 and six from 1995/96. Eight had the same fingerprint . The CDC felt that the two non-matching types will prove to be identical upon reprocessing.

The fact that recent I/S resistant, shelter-related cases in persons new to the shelter system were connected by molecular fingerprinting, as well as epidemiologically, means that not only are old infections progressing to disease, but that despite active case finding, preventive therapy and treatment, transmission of the same strain continues to occur.

CD UPDATE
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Save the dates

USAMRIID/CDC Live Satellite Training Course:

Medical Response to Biological Warfare and Terrorism, September 22–24, 1998, 12:30 PM –4:30 PM (3-day course).

This live, interactive broadcast will inform and educate health care professionals about the medical response in the event of a biological attack.

The target audiences are military clinicians involved in patient care, public health practitioners involved in disease surveillance and prevention, civilian clinicians who would be called upon to respond to an attack, and others who are interested in learning more about this subject.

The course is free and will be held at the State Laboratory Institute in Jamaica Plain. Continuing education credits are being applied for.

For more information or registration, call Allison Hackbarth, MPH, Division of Epidemiology and Immunization at (617) 983-6800.

FDA Live Satellite Training Course:

Foodborne Epidemiological Investigations
NOTE: This course was originally scheduled for November 16–19, 1998, and has been *POSTPONED* until spring of 1999. Look for new dates in the next newsletter issue.

The goal of this course is to encourage broad implementation of detection mechanisms that will ensure reliable reporting and investigation of foodborne illnesses for rapidly establishing cause and implementing control measures to prevent additional cases. The target audience is federal, state, and local public health professionals who investigate foodborne illness.

The course is free and will be held at the State Laboratory Institute in Jamaica Plain and Holyoke Community College in Holyoke. For more information or registration at the Jamaica Plain site, call Allison Hackbarth, MPH, Division of Epidemiology and Immunization at (617) 983-6800. For the Holyoke site, call Gina McNeely, RS, of the Holyoke Board of Health at (413) 534-2186.

A certificate of contact hours will be offered. This course was developed as part of the National Food Safety Initiative.

Communicable Disease UPDATE
is a free quarterly publication of the Bureau of Communicable Disease Control, Massachusetts Department of Public Health.
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